Standard 1: Number and Operation

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 1.1: Understand and use numbers.	K.M.1.1.1 Demonstrate knowledge of our numeration system by counting forward by ones to at least 31. (257.01.a)	1.M.1.1.1 Demonstrate knowledge of our numeration system by counting forward by ones and tens to 100, by counting backward by ones from 20, and by counting with ordinal numbers. (267.01.a)	2.M.1.1.1 Demonstrate knowledge of our numeration system by counting forward by twos, fives, and tens to 100 and by counting forward and backward by ones from any given number less than 100. (277.01.a)								
	K.M.1.1.2 Show the verbal, symbolic, and physical representations of a number up to 10. (257.01.b)	1.M.1.1.2 Read, write, compare, and order whole numbers to 100. (267.01.b)	2.M.1.1.2 Read, write, compare, and order whole numbers to 1,000. (277.01.b)	3.M.1.1.1 Read, write, compare, and order whole numbers to 10,000. (287.01.a)	4.M.1.1.1 Read, write, compare, and order whole numbers to 100,000. (297.01.a)	5.M.1.1.1 Read, write, compare, and order whole numbers through millions and decimal numbers through thousandths. (307.01.a)	6.M.1.1.1 Compare magnitudes and relative magnitudes of positive rational numbers, including whole numbers through billions, fractions, and decimals. (317.01.a, 317.01.d)	7.M.1.1.1 Compare magnitudes and relative magnitudes of rational numbers, including integers, fractions, and decimals. (327.01.a, 327.01.c)	8.M.1.1.1 Compare magnitudes and relative magnitudes of rational numbers, including integers, fractions, decimals, percents, and absolute values. (337.01.a)	9.M.1.1.1 Apply properties of rational numbers. (347.01.b)	10.M.1.1.1 Apply properties of rational numbers. (347.01.b)
		1.M.1.1.3 Identify place value through 99. (267.01.c)	2.M.1.1.3 Identify place value through 999. (277.01.c)	3.M.1.1.2 Identify place value through 9,999. (287.01.b)	4.M.1.1.2 Identify and apply place value in whole numbers. (297.01.b)	5.M.1.1.2 Identify and apply place value in whole numbers and decimal numbers to thousandths. (307.01.b)	6.M.1.1.2 Explain the interrelationship of fractions, decimals, and percents. (317.01.b)	7.M.1.1.2 Solve problems requiring the conversion between simple decimals, fractions, ratios, and percents. (327.01.b)	8.M.1.1.2 Use rational numbers, including percents and ratios, and π (pi) to solve problems. (337.01.b)	9.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real world situations. (347.01.a)	10.M.1.1.2 Use positive and negative numbers, absolute value, fractions, decimals, percentages, and scientific notation, including application in real world situations. (347.01.a)
	K.M.1.1.3 Identify a penny as a value of money. (257.01.c)	1.M.1.1.4 Identify each and state the value of pennies, nickels, and dimes. (267.01.d)	2.M.1.1.4 Count the value of a collection of pennies, nickels, dimes, and quarters up to \$1.00. (277.01.d)	3.M.1.1.3 Count the value of a collection of bills and coins up to \$10.00. (287.01.c)	4.M.1.1.3 Count the value of a collection of bills and coins up to \$100.00. (297.01.c)	5.M.1.1.3 Count back change from \$10.00.					
				3.M.1.1.4 Recognize, name, and represent commonly used fractions using concrete materials. (287.01.a)	4.M.1.1.4 Read, write, compare, and order commonly used fractions with pictorial representations. (297.01.d)	5.M.1.1.4 Compare and order commonly used fractions and their equivalents. (307.01.e)					
							6.M.1.1.3 Locate the position of integers on a number line.	7.M.1.1.3 Locate the position of rational numbers on a number line. (327.01.e)	8.M.1.1.3 Locate the position of rational numbers and positive real numbers on a number line. (337.01.e)		
					4.M.1.1.5 Use decimal numbers with money. (297.01.e)	5.M.1.1.5 Identify decimal equivalents of commonly used fractions. (307.01.c)	6.M.1.1.4 Convert between decimals and fractions. (317.01.b)	7.M.1.1.4 Rewrite multiple factors using exponents. (327.02.c)	8.M.1.1.4 Convert between standard form, scientific notation, and exponential form. (337.01.c)	9.M.1.1.3 Apply properties of exponents. (347.01.c)	10.M.1.1.3 Apply properties of exponents. (347.01.c)

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					9.M.1.1.4 Identify exact and approximate roots without simplification.	
					without simplification.	roots without
						simplification.

Standard 1: Number and Operation (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 1.1: Understand and use numbers. (continued from previous page)						5.M.1.1.6 Apply the number theory concepts of primes, composites, multiples, and factors. (307.01.f)	6.M.1.1.5 Apply number theory concepts (prime, composite, prime factorization) and identify common factors and common multiples. (317.01.e)	7.M.1.1.5 Apply the number theory concepts of primes, composites, and prime factorization and find the Least Common Multiple (LCM) and the Greatest Common Factor (GCF). (327.01.d)	8.M.1.1.5 Apply number theory concepts (primes, composites, prime factorization, LCM, GCF). (337.01.d)	9.M.1.1.5 Solve problems using number theory concepts (factors, multiples, primes). (347.01.d)	10.M.1.1.5 Solve problems using number theory concepts (factors, multiples, primes). (347.01.d)
	K.M.1.1.4 Select strategies appropriate for solving a problem. (258.01.a)	1.M.1.1.5 Select strategies appropriate for solving a problem. (268.01.a)	2.M.1.1.5 Recognize mathematical information and select strategies appropriate for solving a problem. (278.01.a)	3.M.1.1.5 Recognize mathematical information and select strategies appropriate for solving a multi-step problem. (288.01.a)	4.M.1.1.6 Select strategies appropriate for solving a problem. (298.01.a)	5.M.1.1.7 Select strategies appropriate for solving a problem.	6.M.1.1.6 Solve problems using the 4-step process of problem solving (explore, plan, solve, and examine). (318.01.b)	7.M.1.1.6 Recognize pertinent information for problem solving. (328.01.b)	8.M.1.1.6 Recognize pertinent information for problem solving. (338.01.b)		
							6.M.1.1.7 Describe the use of integers in realworld situations. (317.01.f)	7.M.1.1.7 Describe the use of integers in realworld situations.	8.M.1.1.7 Apply integers in one- and two-step common real-world situations.		
	K.M.1.1.5 Use appropriate vocabulary.	1.M.1.1.6 Use appropriate vocabulary.	2.M.1.1.6 Use appropriate vocabulary. (277.01.f)	3.M.1.1.6 Use appropriate vocabulary. (287.01.f)	4.M.1.1.7 Use appropriate vocabulary. (297.01.f)	5.M.1.1.8 Use appropriate vocabulary.	6.M.1.1.8 Use appropriate vocabulary.	7.M.1.1.8 Use appropriate vocabulary.	8.M.1.1.8 Use appropriate vocabulary.	9.M.1.1.6 Use appropriate vocabulary.	10.M.1.1.6 Use appropriate vocabulary.
Goal 1.2: Perform computations accurately.	K.M.1.2.1 Use concrete objects to illustrate the concepts of addition and subtraction. (257.02.a)	1.M.1.2.1 Use objects, pictures, and symbols to add up to 10 and subtract from up to 9. (267.02.a)	2.M.1.2.1 Use strategies for addition and subtraction combinations through 18. (277.02.a)	3.M.1.2.1 Recall basic addition and subtraction facts through 18. (287.02.b)	4.M.1.2.1 Recall multiplication facts through 10 x 10. (297.02.e)	5.M.1.2.1 Recall basic multiplication and division facts up to 10's. (307.02.d)	6.M.1.2.1 Recall basic multiplication and division facts from 12 x 12 Times Table. (317.02.d)	7.M.1.2.1 Recall the common equivalent fractions, decimals, and percents of halves, fourths, and tenths.	8.M.1.2.1 Recall the common equivalent fractions, decimals, and percents of halves, thirds, fourths, fifths, and tenths. (337.02.b)		
		1.M.1.2.2 Solve addition problems using objects, pictures, and symbols for sums up to 10. (268.01.a)	2.M.1.2.2 Add whole numbers with and without regrouping through 99. (277.02.b)	3.M.1.2.2 Add and subtract whole numbers with and without regrouping through 999. (287.02.a)	4.M.1.2.2 Add and subtract whole numbers. (297.02.a)	5.M.1.2.2 Add and subtract decimal numbers through thousandths. (307.02.c)	6.M.1.2.2 Add, subtract, multiply, and divide whole numbers, decimals, and simple fractions (including unlike denominators). (317.02.a, 317.02.b, 317.02.c, 317.02.g)	7.M.1.2.2 Add, subtract, multiply, and divide whole numbers, fractions and decimals; and add, multiply, and divide integers. (327.02.a, 327.02.d)	8.M.1.2.2 Add, subtract, multiply, and divide rational numbers. (337.02.a)		
			2.M.1.2.3 Add three one-digit addends. (277.02.c)	3.M.1.2.3 Add three one- and two- digit addends. (287.02.c)							
		1.M.1.2.3 Solve subtraction problems using objects, pictures, and symbols from up to 9. (268.01.a)	2.M.1.2.4 Choose addition or subtraction to solve word problems and explain the choice. (278.01.b)	10 x 10. (287.02.d)	4.M.1.2.3 Multiply up to two-digit by two- digit whole numbers and divide whole numbers by one-digit divisors. (297.02.b)	5.M.1.2.3 Multiply and divide whole numbers. (307.02.a)		7.M.1.2.3 Evaluate whole numbers in exponential form.	8.M.1.2.3 Evaluate numerical expressions with whole number exponents. (337.02.d)		
					4.M.1.2.4 Add and subtract fractions with like denominators that do not require simplification. (297.02.c)	5.M.1.2.4 Add and subtract fractions with like denominators without simplification. (307.02.b)					

Standard 1: Number and Operation (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 1.2: Perform computations accurately. (continued from previous page)					4.M.1.2.5 Add and subtract decimals using money. (297.02.d)						
						5.M.1.2.5 Evaluate numerical expressions that include parentheses. (307.02.e)	6.M.1.2.3 Evaluate numerical expressions with whole numbers using the order of operations (excluding exponents). (317.02.e)	7.M.1.2.4 Evaluate numerical expressions using the order of operations with whole numbers and decimals. (327.02.b)	8.M.1.2.4 Evaluate numerical expressions with rational numbers using the order of operations. (337.02.c)	9.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a)	10.M.1.2.1 Use the order of operations and perform operations with rational numbers. (347.02.a)
				3.M.1.2.5 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. (287.02.f)	4.M.1.2.6 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. (297.02.f)	5.M.1.2.6 Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three. (307.02.f)	6.M.1.2.4 Select and use an appropriate method of computation from mental math, paper and pencil, calculator or a combination of the three. (317.02.h)	7.M.1.2.5 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. (327.02.e)	8.M.1.2.5 Select and use an appropriate method of computation from mental math, paper and pencil, calculator, or a combination of the three. (337.02.e)		
				3.M.1.2.6 Use appropriate operations to solve word problems and show or explain work. (288.01.b)	4.M.1.2.7 Select and use appropriate operations to solve word problems and show or explain work. (298.01.b)	5.M.1.2.7 Use a variety of strategies to solve real life problems. (308.01.a)	6.M.1.2.5 Use a variety of strategies to solve real life problems. (318.01.a)	7.M.1.2.6 Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations. (328.01.a)	8.M.1.2.6 Use a variety of strategies including common mathematical formulas to compute problems drawn from real life situations. (338.01.a)		
	K.M.1.2.2 Use appropriate vocabulary. (257.02.b)	1.M.1.2.4 Use appropriate vocabulary. (267.02.b)	2.M.1.2.5 Use appropriate vocabulary. (277.02.e)	3.M.1.2.7 Use appropriate vocabulary. (287.02.g)	4.M.1.2.8 Use appropriate vocabulary. (297.02.g)	5.M.1.2.8 Use appropriate vocabulary. (307.02.g)	6.M.1.2.6 Use appropriate vocabulary and notations. (317.02.i)	7.M.1.2.7 Use appropriate vocabulary and notations. (327.02.f)	8.M.1.2.7 Use appropriate vocabulary and notations. (337.02.f)		
Goal 1.3: Estimate and judge reasonableness of results.	K.M.1.3.1 Use estimation to identify a number of objects. (257.03.a)	1.M.1.3.1 Estimate a quantity of objects when shown a set of 10. (267.03.a)	2.M.1.3.1 Estimate to predict the sum of numbers through 99. (277.03.a)	3.M.1.3.1 Estimate to predict sums and differences. (287.03.a)	4.M.1.3.1 Estimate to predict computation results. (297.03.a)	5.M.1.3.1 Estimate to predict computation results. (307.03.a)	6.M.1.3.1 Estimate to predict computation results. (317.03.a)	7.M.1.3.1 Estimate to predict computation results. (327.03.a)	8.M.1.3.1 Estimate to predict computation results. (337.03.a)		
	K.M.1.3.2 Use estimation to evaluate the reasonableness of an answer. (257.03.b)	1.M.1.3.2 Use estimation to evaluate the reasonableness of an answer. (267.03.c)	2.M.1.3.2 Use estimation to evaluate the reasonableness of the sum of numbers through 99. (277.03.b)	3.M.1.3.2 Use estimation to evaluate the reasonableness of a sum or difference. (287.03.b)	4.M.1.3.2 Use estimation to evaluate the reasonableness of an answer. (297.03.b)	5.M.1.3.2 Identify when an estimate is sufficient or when an exact answer is required. (307.03.b)	6.M.1.3.2 Explain when estimation is appropriate. (317.03.b)	7.M.1.3.2 Explain when estimation is appropriate and describe the usefulness of an estimate as opposed to an exact answer. (327.03.b)	8.M.1.3.2 Identify when estimation is appropriate and apply to problem solving situations. (337.03.b)	9.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a)	10.M.1.3.1 Apply number sense to everyday situations and judge reasonableness of results. (347.03.a)
						5.M.1.3.3 Explain why a given estimate is an overestimate or underestimate. (307.03.c)	6.M.1.3.3 Identify whether a given estimate is an overestimate or underestimate. (317.03.c)	7.M.1.3.3 Identify whether a given estimate is an overestimate or underestimate. (327.03.c)	8.M.1.3.3 Identify whether a given estimate is an overestimate or underestimate. (337.03.c)	9.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b)	10.M.1.3.2 Identify that error accumulates in a computation when there is rounding. (349.05.b)

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t f	the use of a four-	the use of a four- function calculator to				8.M.1.3.4 Use a four- function calculator to solve complex grade- level problems.	
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Standard 1: Number and Operation (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 1.3: Estimate and judge reasonableness of results. (continued from previous page)						5.M.1.3.5 Formulate conjectures and discuss why they must be or seem to be true. (308.02.c)	6.M.1.3.5 Formulate conjectures and discuss why they must be or seem to be true. (318.02.c)	7.M.1.3.5 Formulate conjectures and discuss why they must be or seem to be true. (328.02.c)	8.M.1.3.5 Formulate conjectures and justify (short of formal proof) why they must be or seem to be true. (338.02.c)		
	K.M.1.3.3 Use appropriate vocabulary. (257.03.c)	1.M.1.3.3 Use appropriate vocabulary. (267.03.d)	2.M.1.3.3 Use appropriate vocabulary. (277.03.c)	3.M.1.3.4 Use appropriate vocabulary. (287.03.c)	4.M.1.3.4 Use appropriate vocabulary. (297.03.c)	5.M.1.3.6 Use appropriate vocabulary. (307.03.d)	6.M.1.3.6 Use appropriate vocabulary. (317.03.d)	7.M.1.3.6 Use appropriate vocabulary and notations. (327.03.d)	8.M.1.3.6 Use appropriate vocabulary and notations. (337.03.d)		

Standard 2: Concepts and Principles of Measurement

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 2.1: Understand and use U.S. customary and metric measurements.	K.M.2.1.1 Compare the lengths or sizes of objects (e.g., longer, shorter, larger, smaller).	1.M.2.1.1 Use non- standard tools and units for measuring length, volume (capacity), and weight. (269.01.a)	2.M.2.1.1 Select a tool that can measure a given attribute (ruler – length, cup – volume, balance – weight, clock – time, thermometer – temperature). (279.01.a)	3.M.2.1.1 Select and use appropriate units and tools to make formal measurements of length and temperature in both systems. (289.01.a)	4.M.2.1.1 Select and use appropriate units and tools to make the formal measurements of length, temperature, and weight in both systems. (299.01.a)	appropriate units and tools to make formal measurements of length,	6.M.2.1.1 Select and use appropriate units and tools to make formal measurements in both systems. (319.01.a)	appropriate units and tools to make formal measurements in both	8.M.2.1.1 Select and use appropriate units and tools to make formal measurements in both systems. (339.01.a)		
	K.M.2.1.2 Estimate measurement using concrete objects. (259.01.b)	1.M.2.1.2 Estimate measurement using non-standard units. (269.01.b)	2.M.2.1.2 Estimate length and time using standard units. (279.01.b)	3.M.2.1.2 Estimate length, time, and weight in real-world problems using standard units. (289.01.b)	4.M.2.1.2 Estimate length, time, weight, and temperature in real-world problems using standard units. (299.01.b)	5.M.2.1.2 Estimate length, time, weight, temperature, and volume (capacity) in real-world problems using standard units. (309.01.b)	6.M.2.1.2 Apply estimation of measurement to real-world and content problems using standard measuring devices. (319.01.b)	7.M.2.1.2 Apply estimation of measurement to real-world and content problems using standard measuring devices. (329.01.b)	8.M.2.1.2 Apply estimation of measurement to real-world and content problems using standard measuring devices. (339.01.b)		
		1.M.2.1.3 Tell time to the hour.	2.M.2.1.3 Tell time using both digital and analog clocks to the half hour. (279.01.c)	3.M.2.1.3 Tell time using digital and analog clocks using quarter hour and five minute intervals. (289.01.e)	4.M.2.1.3 Tell time to the nearest minute using digital and analog clocks. (299.01.e)	5.M.2.1.3 Tell time to the nearest second.					
			2.M.2.1.4 Select the most appropriate unit to measure the time of a given situation (minutes, hours). (279.01.d)	3.M.2.1.4 Solve real world problems related to time.	4.M.2.1.4 Solve real-world problems related to elapsed time. (299.01.f)	5.M.2.1.4 Solve real world problems related to elapsed time. (309.01.d)	6.M.2.1.3 Apply understanding of relationships to solve real-world problems related to elapsed time. (319.01.f)				
								7.M.2.1.3 Explain the differences between perimeter, area, and volume (capacity) and their measures within both systems. (329.01.c)	8.M.2.1.3 Compare the differences and relationships among measures of perimeter, area, and volume (capacity) within both systems. (339.01.c)		
						5.M.2.1.5 Calculate the perimeter of polygons and the area of rectangles and squares. (309.01.c, 311.01.d)	6.M.2.1.4 Given the formulas, find the perimeter or circumference and area of triangles, circles and parallelograms (all kinds). (319.01.c, 321.01.e)	7.M.2.1.4 Given the formulas, find the perimeter, circumference, or area of triangles, circles, and quadrilaterals. (331.01.e)	8.M.2.1.4 Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, and the volume and surface area of rectangular prisms. (341.01.e)	9.M.2.1.1 Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, and the volume and surface area of rectangular prisms and cylinders. (349.01.a)	10.M.2.1.1 Given the formulas, find the circumference, perimeter, or area of triangles, circles, and quadrilaterals, the volume of spheres, non-oblique prisms, cylinders, and cones, and the surface area of spheres, non-oblique prisms, cylinders, and right square-based pyramids. (349.01.a)

Standard 2: Concepts and Principles of Measurement (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 2.1: Understand and use U.S. customary and metric measurements (continued from previous page)				3.M.2.1.5 Identify relationships of length and time within the U.S. customary system and within the metric system. (289.01.c, 289.01.d)	4.M.2.1.5 Convert units of length and time within the U. S. Customary system. (299.01.c)	5.M.2.1.6 Convert units of length within each system. (309.01.e)	6.M.2.1.5 Convert units of measurement within each system in one-step problems (e.g., quarts to gallons and gallons to quarts). (319.01.e)	7.M.2.1.5 Convert units of measurement within each system. (329.01.e)	8.M.2.1.5 Convert units of measurement within each system in problem solving situations. (339.01.e)		
	K.M.2.1.3 Name the day of the week and the day's date using a calendar.	1.M.2.1.4 Recite the days of the week, in order, and identify yesterday and tomorrow on a calendar.	2.M.2.1.5 Recite the months of the year, in order.	3.M.2.1.6 State that there are 24 hours in a day, 7 days in a week, and 12 months in a year.	4.M.2.1.6 State that there are 365 days in a year and 52 weeks in a year.	5.M.2.1.7 Convert days into weeks and years and years into decades and centuries.					
					4.M.2.1.7 Recall length and volume (capacity) equivalences involving inches, feet, yards, cups, pints, quarts, and gallons in the U.S. Customary system.	5.M.2.1.8 Recall length, volume (capacity), and mass equivalences involving millimeters, centimeters, meters, milliliters, liters, grams, and kilograms in the metric system.	6.M.2.1.6 Solve problems involving perimeter and area of rectangles. (321.01.d)	7.M.2.1.6 Solve problems involving perimeter and area of rectangles and triangles. (329.01.d)	8.M.2.1.6 Solve problems involving area of circles and the perimeter and area of rectangles and triangles. (339.01.d)	9.M.2.1.2 Solve problems involving circumference, perimeter, or area of triangles, circles, and rectangles.	10.M.2.1.2 Solve problems involving circumference, perimeter, or area of triangles, circles, and rectangles.
	K.M.2.1.4 Use appropriate vocabulary. (259.01.c)	1.M.2.1.5 Use appropriate vocabulary. (269.01.d)	2.M.2.1.6 Use appropriate vocabulary. (279.01.e)	3.M.2.1.7 Use appropriate vocabulary. (289.01.g)	4.M.2.1.8 Use appropriate vocabulary. (299.01.g)	5.M.2.1.9 Use appropriate vocabulary. (309.01.g)	6.M.2.1.7 Use appropriate vocabulary and notations. (319.01.g)	7.M.2.1.7 Use appropriate vocabulary and notations. (329.01.f)	8.M.2.1.7 Use appropriate vocabulary and notations. (339.01.f)		
Goal 2.2: Apply the concepts of rates, ratios, and proportions.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	6.M.2.2.1 Identify and write ratios and scales (on a map). (319.03.a)	7.M.2.2.1 Explain rates and their relationship to ratios, and use proportions to solve problems represented with a diagram. (329.02.a, 329.03.a)	8.M.2.2.1 Use rates, proportions, ratios, and map scales in problem-solving situations. (339.03.a)	9.M.2.2.1 Use rates, ratios, proportions, and map scales in problem-solving situations. (349.03.a)	10.M.2.2.1 Use rates, ratios, proportions, map scales, and scale factors (one- and two-dimensional) in problem-solving situations. (349.03.a)
								7.M.2.2.2 Reduce rates to unit rates.	8.M.2.2.2 Determine unit rates in real-world situations.	9.M.2.2.2 Apply concepts of rates and direct and indirect measurements.	10.M.2.2.2 Apply concepts of rates and direct and indirect measurements.
										9.M.2.2.3 Construct equivalent units, comparable units, and conversions. (349.02.a)	10.M.2.2.3 Construct equivalent units, comparable units, and conversions. (349.02.a)
Goal 2.3: Apply dimensional analysis.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	7.M.2.3.1 Identify properly constructed dimensional analysis conversions. (329.04.a)	8.M.2.3.1 Illustrate the interrelationship of measurement units through dimensional analysis conversions. (339.04.a)	9.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature. (349.04.a)	10.M.2.3.1 Use customary and metric units and their relationship to one another and to real world applications involving length, area, capacity, weight, time, and temperature. (349.04.a)

Standard 2: Concepts and Principles of Measurement (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 2.4: Apply appropriate techniques and tools to determine measurements.	No objectives at this grade level.	No objectives at this grade level.		No objectives at this grade level.	3	9.M.2.4.1 Determine and use appropriate units. (349.01.a)	10.M.2.4.1 Determine and use appropriate units. (349.01.a)				
										9.M.2.4.2 Approximate error in measurement situations.	10.M.2.4.2 Approximate error in measurement situations.

Standard 3: Concepts and Language of Algebra and Functions

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 3.1: Use algebraic symbolism as a tool to represent mathematical relationships.		1.M.3.1.1 Write an addition problem in both vertical and horizontal form. (270.01.a)	2.M.3.1.1 Write addition and subtraction problems vertically and horizontally. (280.01.a)	3.M.3.1.1 Write a multiplication problem vertically and horizontally. (290.01.a)	4.M.3.1.1 Write a division problem using a bracket (-) and/or the division symbol (÷). (300.01.a)	5.M.3.1.1 Write a division problem as a proper and an improper fraction.	6.M.3.1.1 Discuss the meaning and use of variables in simple expressions and equations. (320.01.a)	7.M.3.1.1 Use variables in simple expressions and equations. (330.01.a)	8.M.3.1.1 Use variables in expressions, equations, and inequalities. (340.01.a)	9.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a)	10.M.3.1.1 Represent mathematical relationships using variables, expressions, linear equations and inequalities. (350.01.a)
	K.M.3.1.1 Use concrete objects to identify and show a solution to problems. (258.02.a)	1.M.3.1.2 Draw a picture and/or write a number sentence when given an addition word problem. (270.01.b; 268.02.a)	2.M.3.1.2 Write a number sentence from an addition or subtraction problem- solving situation. (278.02.a)	3.M.3.1.2 Write a number sentence using simple geometric shapes as symbols to represent an unknown number. (290.01.b)	4.M.3.1.2 Write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. (300.01.b)		6.M.3.1.2 Translate simple word statements into algebraic equations. (320.01.b)	7.M.3.1.2 Translate simple word statements into algebraic expressions and equations. (330.01.b)	8.M.3.1.2 Translate simple word statements and story problems into algebraic expressions and equations. (340.01.b)		
			2.M.3.1.3 Show the relationship between addition and subtraction using fact families. (280.01.d)	3.M.3.1.3 Write a fact family when given two addends.	4.M.3.1.3 Show the relationship between multiplication and division using fact families.	5.M.3.1.3 Write a fact family when given two factors.					
	K.M.3.1.2 Compare sets of objects using vocabulary (less than, greater than, and same as). (260.01.a)	1.M.3.1.3 Compare numbers to 99 using vocabulary (less than, greater than, equal to, more, less, same, fewer). (270.01.c)	2.M.3.1.4 Compare numbers to 999 using the vocabulary words/phrases of less than, greater than, equal to. (280.01.c)	3.M.3.1.4 Read and use symbols (<, >, =) to express relationships with numbers through 9,999. (290.01.c)	4.M.3.1.4 Read and use symbols of "<," ">," and "=" to express relationships with numbers through 1,000,000. (300.01.c)	5.M.3.1.4 Read and use symbols of "<," ">," and "=" to express relationships. (310.01.c)	6.M.3.1.3 Read and use symbols of "<," ">," and "=" to express relationships. (320.01.c)	7.M.3.1.3 Use symbols "<," ">,""=," "≠," "≤," and "≥" to express relationships. (330.01.c)	8.M.3.1.3 Use symbols "<," ">,""=," "≠," "≤," and "≥" to express relationships. (340.01.c)		
Goal 3.2: Evaluate algebraic expressions.	No objectives at this grade level.	No objectives at this grade level.	2.M.3.2.1 Use the commutative property of addition.	3.M.3.2.1 Use the commutative property of multiplication. (290.02.a)	4.M.3.2.1 Use the identity and zero properties of multiplication.	5.M.3.2.1 Use the following properties as they relate to addition and multiplication: commutative, associative, and distributive. (310.02.a)	6.M.3.2.1 Use the following properties in evaluating numerical expressions: commutative, associative, identity, zero, inverse, and distributive. (320.02.a)	7.M.3.2.1 Evaluate simple numeric and algebraic expressions using commutative, associative, identity, zero, inverse, distributive, and substitution properties. (330.02.a)	8.M.3.2.1 Use and apply the following properties in evaluating algebraic expressions: commutative, associative, identity, zero, inverse, distributive, and substitution. (340.02.a)	9.M.3.2.1 Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers. (350.02.a)	10.M.3.2.1 Use appropriate procedures for manipulating and simplifying algebraic expressions involving variables, integers, and rational numbers. (350.02.a)
			2.M.3.2.2 Solve addition problems using the commutative property (e.g., If $7 + 5 = 12$, then what is $5 + 7$?).	3.M.3.2.2 Solve multiplication problems using the commutative property (e.g., If 24 x 38 = 912, then what is 38 x 24?).			6.M.3.2.2 Evaluate simple algebraic expressions using substitution.	7.M.3.2.2 Use the order of operations in evaluating simple algebraic expressions. (330.02.b)	8.M.3.2.2 Use the order of operations in evaluating simple algebraic expressions. (340.02.b)		
									8.M.3.2.3 Simplify algebraic expressions. (340.02.c)		

Standard 3: Concepts and Language of Algebra and Functions (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 3.3: Solve algebraic equations and inequalities.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	3.M.3.3.1 Solve missing addend equations. (290.03.a)	4.M.3.3.1 Solve missing factor equations. (300.03.a)	5.M.3.3.1 Solve missing factor equations. (310.03.a)	6.M.3.3.1 Solve one- step equations with whole numbers. (320.03.a)	7.M.3.3.1 Solve one- step equations. (330.03.a)	8.M.3.3.1 Solve one- and two-step equations and inequalities. (340.03.a)	9.M.3.3.1 Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as 3(2x-5) = 5x + 7 or $3(2x-5) > 5x + 7$. (350.03.a)	10.M.3.3.1 Use appropriate procedures to solve multi-step, first-degree equations and inequalities; such as $3(2x-5)=5x+7$ or $3(2x-5)>5x+7$. (350.03.a)
									8.M.3.3.2 Match graphical representations with simple linear equations. (340.03.b)	9.M.3.3.2 Differentiate between linear and non- linear equations and graphs.	10.M.3.3.2 Differentiate between linear and non-linear equations and graphs.
Goal 3.4: Understand the concept of functions.	extend simple repeating	1.M.3.4.1 Describe and extend a repeating pattern (e.g., ABACABAC). (273.01.a)	2.M.3.4.1 Translate a repeating pattern from one representation to another (e.g., even, odd, even, odd translates to ABAB). (283.01.a)	3.M.3.4.1 Extend a growing arithmetic, numerical pattern when given a rule with a single operation of one digit addition (e.g., add 3). (293.01.a)	4.M.3.4.1 Identify the rule (function) for a pattern using whole numbers and addition and then extend the pattern. (303.01.a)	5.M.3.4.1 Identify the rule for a pattern using whole numbers and extend the pattern. (313.01.a)	6.M.3.4.1 Extend simple patterns and state a rule (function) that generates the pattern using whole numbers, decimals, and fractions as inputs. (323.01.a)	7.M.3.4.1 Extend patterns involving rational numbers and describe the rule that generates the pattern. (333.01.a)	8.M.3.4.1 Extend patterns and identify a rule (function) that generates the pattern using rational numbers. (343.01.a)		
							6.M.3.4.2 Describe and extend patterns by using manipulatives and pictorial representations. (323.01.b)				
							6.M.3.4.3 Use mathematical models to show change in a real world context. (323.01.c)	7.M.3.4.2 Explain how a change in one quantity impacts a change in another quantity. (333.01.b)	8.M.3.4.2 Use relationships to explain how a change in one quantity may result in a change in another, and identify the relationship as a positive, negative, or neither. (343.01.b)	9.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as x + y = 7 and 2x + 3y = 21. (350.04.a)	10.M.3.4.1 Use appropriate procedures to solve linear systems of equations involving two variables; such as x + y = 7 and 2x + 3y = 21. (350.04.a)
	K.M.3.4.2 Use appropriate vocabulary. (263.01.c)	1.M.3.4.2 Use appropriate vocabulary. (273.01.c)	2.M.3.4.2 Use appropriate vocabulary. (283.01.c)	3.M.3.4.2 Use appropriate vocabulary. (293.01.c)	4.M.3.4.2 Use appropriate vocabulary. (303.01.c)	5.M.3.4.2 Use appropriate vocabulary. (313.01.d)	6.M.3.4.4 Use appropriate vocabulary. (323.01.d)	7.M.3.4.3 Use appropriate vocabulary and notations. (333.01.c)	8.M.3.4.3 Use appropriate vocabulary and notations. (343.01.c)		

Standard 3: Concepts and Language of Algebra and Functions (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 3.5: Represent equations, inequalities and functions in a variety of formats.	No objectives at this grade level.	No objectives at this grade level.	7.M.3.5.1 Represent a simple set of data in a table, as a graph, and as a mathematical relationship. (333.02.a)	8.M.3.5.1 Represent a set of data in a table, as a graph, and as a mathematical relationship. (343.02.a)	9.M.3.5.1 Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.	10.M.3.5.1 Given graphs, charts, ordered pairs, mappings, or equations, determine whether a relation is a function.					
										9.M.3.5.2 Evaluate functions written in functional notation.	10.M.3.5.2 Evaluate functions written in functional notation.
										9.M.3.5.3 Given a function, identify domain and range.	10.M.3.5.3 Given a function, identify domain and range.
Goal 3.6: Apply functions to a variety of problems.	No objectives at this grade level.	5.M.3.6.1 Use patterns to represent problems. (313.02.a)	6.M.3.6.1 Use patterns to represent and solve simple problems.	7.M.3.6.1 Use patterns and linear functions to represent and solve simple problems. (333.03.a)	8.M.3.6.1 Use patterns and linear functions to represent and solve problems. (343.03.a)	9.M.3.6.1 Model and solve real-world phenomena using multistep, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a)	10.M.3.6.1 Model and solve real-world phenomena using multistep, first degree, single variable equations and inequalities, linear equations, and two-variable linear systems of equations. (353.01.a)				
										9.M.3.6.2 Use graphs and sequences to represent and solve problems. (347.02.b)	10.M.3.6.2 Use graphs and sequences to represent and solve problems. (347.02.b)

Standard 4: Concepts and Principles of Geometry

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 4.1: Apply concepts of size, shape, and spatial relationships.	K.M.4.1.1 Recognize, name, compare, and sort two- and three- dimensional shapes (triangle, rectangle, square, circle, cone, cube). (261.01.a)	1.M.4.1.1 Recognize, name, build, draw, and sort two- and three- dimensional shapes (triangle, rectangle, square, circle, cone, cube, cylinder). (271.01.a)	2.M.4.1.1 Recognize, name, build, compare, and sort the two- and three-dimensional shapes of triangles, rectangles, squares, circles, cones, cubes, spheres, cylinders, and pyramids. (281.01.a)	3.M.4.1.1 Identify, compare, and analyze attributes of two- and three- dimensional shapes, including right angles, squares, and three-dimensional shapes in environment, and develop vocabulary to describe the attributes.	4.M.4.1.1 Identify, compare, and analyze attributes of two- and three- dimensional shapes, including parallel, intersecting, and perpendicular lines, and develop vocabulary to describe the attributes. (301.01.a)	5.M.4.1.1 Identify, compare and analyze attributes of polygons and polyhedra and develop vocabulary to describe the attributes. (311.01.a)	6.M.4.1.1 Describe relationships among types of one- and two-dimensional geometric figures, using their defining properties. (321.01.a)	7.M.4.1.1 Classify relationships among types of one- and two-, dimensional geometric figures, using their defining properties. (331.01.a)	8.M.4.1.1 Describe and classify relationships among types of one-, two-, and three-dimensional geometric figures, using their defining properties. (341.01.a)		
	K.M.4.1.2 Sort and classify objects.	1.M.4.1.2 Sort and classify objects by more than one attribute. (273.01.b)	2.M.4.1.2 Sort and classify objects by more than one attribute. (283.01.b)			5.M.4.1.2 Classify angles without formal measures as acute, right, obtuse, and/or straight.	6.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. (321.01.b)	7.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. (331.01.b)	8.M.4.1.2 Draw and measure various angles and shapes using appropriate tools. (341.01.b)		
						5.M.4.1.3 Identify and label points, lines, line segments, rays, and angles. (311.01.b)	6.M.4.1.3 Apply fundamental concepts, properties, and relationships among points, lines, rays, and angles. (321.01.c)	7.M.4.1.3 Apply fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles. (331.01.c)	8.M.4.1.3 Apply the fundamental concepts, properties, and relationships among points, lines, rays, planes, and angles. (341.01.c)		
				3.M.4.1.2 Discuss sliding and flipping of two-dimensional shapes.	4.M.4.1.2 Predict the results of sliding and flipping two-dimensional shapes. (301.01.d)	5.M.4.1.4 Discuss and predict the results of sliding, flipping, and turning two-dimensional shapes. (311.01.e)	6.M.4.1.4 Describe reflections, translations, and rotations on various shapes. (321.01.g)	7.M.4.1.4 Explain and model the effects of reflections, translations, and rotations on various shapes. (331.01.g)	8.M.4.1.4 Identify and model the effects of reflections, translations, rotations, and scaling on various shapes. (341.01.g)		
			2.M.4.1.3 Draw a line of symmetry. (281.01.b)	3.M.4.1.3 Identify vertical and horizontal lines of symmetry.	4.M.4.1.3 Identify multiple lines of symmetry in two- dimensional shapes.	5.M.4.1.5 Identify shapes as congruent, similar, or symmetrical.	6.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes. (321.01.d)	7.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes. (331.01.d)	8.M.4.1.5 Identify congruence, similarities, and line symmetry of shapes. (341.01.d)	9.M.4.1.1 Recognize congruency and similarity of two-dimensional figures. (351.01.a)	10.M.4.1.1 Recognize and apply congruency and similarity of two-dimensional figures. (351.01.a)
											10.M.4.1.2 Recognize and use similarity as it relates to size variations in two- and three-dimensional objects. (351.01.b)
					4.M.4.1.4 Discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. (301.01.c)	5.M.4.1.6 Explain the difference between perimeter and area of a polygon. (311.01.d)	6.M.4.1.6 Discuss the spatial relationship between two- and three-dimensional objects. (321.01.f)	7.M.4.1.6 Describe the concept of surface area and volume (capacity). (331.01.f)	8.M.4.1.6 Explain the concept of surface area and volume (capacity). (341.01.f)		
	K.M.4.1.3 Apply appropriate vocabulary. (261.01.d)	1.M.4.1.3 Use appropriate vocabulary. (271.01.d)	2.M.4.1.4 Use appropriate vocabulary. (281.01.d)	3.M.4.1.4 Use appropriate vocabulary.	4.M.4.1.5 Use appropriate vocabulary. (301.01.e)	5.M.4.1.7 Use appropriate vocabulary. (311.01.f)	6.M.4.1.7 Use appropriate vocabulary and symbols. (323.01.h)	7.M.4.1.7 Use appropriate vocabulary and symbols. (331.01.h)	8.M.4.1.7 Use appropriate vocabulary and symbols. (341.01.h)		

Standard 4: Concepts and Principles of Geometry (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 4.2: Apply the geometry of right triangles.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	9.M.4.2.1 Given the Pythagorean Theorem, calculate a missing side length of a right triangle where the legs and hypotenuse are natural numbers. (351.02.c)	10.M.4.2.1 Given the Pythagorean Theorem, calculate missing side lengths of right triangles without simplifying radicals. (351.02.c)
Goal 4.3: Apply graphing in two dimensions.	K.M.4.3.1 Describe the location of an object relative to another (e.g., next to, under, over, behind).	1.M.4.3.1 Indicate whether a number is above or below a benchmark number (100 or less) on a number line.	2.M.4.3.1 Indicate whether a number is above or below a benchmark number of 1000 or less on a number line.	3.M.4.3.1 Identify the point of final destination given directions for movement on a positive number line.	4.M.4.3.1 Use ordered pairs to identify the position of a point in the first quadrant on a coordinate grid.	5.M.4.3.1 Use ordered pairs to identify and plot points in the first quadrant on a coordinate grid. (311.02.a)	6.M.4.3.1 Identify and plot points in the first quadrant on a coordinate plane. (321.02.a)	7.M.4.3.1 Identify and plot points on a coordinate plane.	8.M.4.3.1 Identify and plot points on a coordinate plane. (341.03.a)	9.M.4.3.1 Identify attributes of the Cartesian Coordinate System, such as quadrants, origin, and axes. (351.03.a)	10.M.4.3.1 Identify attributes of the Cartesian Coordinate System, such as quadrants, origin, and axes. (351.03.a)
										9.M.4.3.2 Graph scatter plots and identify informal trend lines (e.g., eyeball fit lines).	10.M.4.3.2 Graph scatter plots and identify informal trend lines (e.g., eyeball fit lines).
										9.M.4.3.3 Identify positive and negative correlations.	10.M.4.3.3 Identify positive and negative correlations.
Goal 4.4: Represent and graph linear relationships.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	9.M.4.4.1 Create graphs and equations for linear relationships.	10.M.4.4.1 Create graphs and equations for linear relationships.
										9.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols.	10.M.4.4.2 Represent linear relationships using tables, graphs, and mathematical symbols.
										9.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts.	10.M.4.4.3 Interpret attributes of linear relationships such as slope, rate of change, and intercepts.
Goal 4.5: Use reasoning skills.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	10.M.4.5.1 Use logic to make and evaluate mathematical arguments. (348.02.b)

Standard 5: Data Analysis, Probability, and Statistics

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 5.1: Understand data analysis.	K.M.5.1.1 Interpret information from real object graphs and simple pictographs. (262.01.a)	1.M.5.1.1 Interpret information found in real object graphs and in pictographs to answer questions. (272.01.a)	2.M.5.1.1 Interpret information found in simple tables, charts, bar graphs, and pictographs. (282.01.a)	3.M.5.1.1 Interpret information found in tables, bar graphs, and charts. (292.01.a)	4.M.5.1.1 Read and interpret simple tables, charts, bar graphs, and line graphs. (302.01.a)	5.M.5.1.1 Read and interpret tables, charts, bar graphs, and line graphs. (312.01.a)	6.M.5.1.1 Read and interpret tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables, line plots, and circle graphs. (322.01.a)	7.M.5.1.1 Read and interpret tables, charts, and graphs, including frequency tables, scatter plots, broken line graphs, line plots, bar graphs, histograms, circle graphs, and stemand-leaf plots. (332.01.a)	8.M.5.1.1 Analyze and interpret tables, charts, and graphs, including frequency tables, scatter plots, broken line graphs, line plots, bar graphs, histograms, circle graphs, and stemand-leaf plots. (342.01.a)	9.M.5.1.1 Analyze and interpret tables, charts, and graphs, including scatter plots, broken line graphs, and box-and-whisker plots. (352.01.a)	10.M.5.1.1 Analyze and interpret tables, charts, and graphs, including scatter plots, multiple broken line graphs, and box-and-whisker plots. (352.01.a)
							6.M.5.1.2 Explain and justify stated conclusions drawn from tables, charts, and graphs. (322.01.b)	7.M.5.1.2 Explain conclusions drawn from tables, charts, and graphs. (332.01.b)	8.M.5.1.2 Explain and justify conclusions drawn from tables, charts, and graphs. (342.01.b)		
	K.M.5.1.2 Use appropriate vocabulary. (262.01.b)	1.M.5.1.2 Use appropriate vocabulary. (272.01.b)	2.M.5.1.2 Use appropriate vocabulary. (282.01.b)	3.M.5.1.2 Use appropriate vocabulary. (292.01.c)	4.M.5.1.2 Use appropriate vocabulary. (302.01.c)	5.M.5.1.2 Use appropriate vocabulary. (312.01.c)	6.M.5.1.3 Use appropriate vocabulary and notations. (322.01.c)	7.M.5.1.3 Use appropriate vocabulary and notations. (332.01.c)	8.M.5.1.3 Use appropriate vocabulary and notations. (342.01.c)		
Goal 5.2: Collect, organize, and display data.	K.M.5.2.1 Create a graph using real objects or pictorial representations. (262.02.a)	1.M.5.2.1 Gather and display data in real object graphs and in pictographs to answer a question. (272.02.a)	2.M.5.2.1 Gather and display data in tables, charts, and bar graphs in order to answer a question. (282.02.a)	3.M.5.2.1 Collect, organize, and display data in tables, charts, or bar graphs in order to answer a question. (292.02.a)	4.M.5.2.1 Collect, organize, and display data in tables and charts to answer a question. (302.02.a)	5.M.5.2.1 Collect, organize, and display the data with appropriate notation in tables, charts, bar graphs, and line graphs. (312.02.a)	6.M.5.2.1 Collect, organize, and display the data with appropriate notation in tables, charts, and graphs, including broken line graphs, bar graphs, frequency tables and line plots. (322.02.a)	7.M.5.2.1 Collect, organize, and display data with appropriate notation in tables, charts and graphs, including scatter plots, broken line graphs, line plots, bar graphs, and stem-and-leaf plots. (332.02.a)	8.M.5.2.1 Collect, organize, and display data with appropriate notation in tables, charts, and graphs, including scatter plots, broken line graphs, line plots, bar graphs, histograms, and stemand-leaf plots. (342.02.a)	9.M.5.2.1 Collect, organize, and display data in tables, charts, and graphs. (352.02.a)	10.M.5.2.1 Collect, organize, and display data in tables, charts, and graphs. (352.02.a)
			2.M.5.2.2 Use tally marks to represent data.		4.M.5.2.2 Display data in a bar graph using appropriate notation such as a title, axes labels, and reasonable scales. (302.02.a)						
Goal 5.3: Apply simple statistical measurements.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	4.M.5.3.1 Find the mode of a simple set of whole number data.	5.M.5.3.1 Find measures of central tendency - median and mode - with simple sets of data using whole numbers. (312.03.a)	6.M.5.3.1 Find measures of central tendency – mean, median, and mode – with simple sets of data. (322.03.a)	7.M.5.3.1 Determine the measures of central tendency – mean, median and mode – with sets of data. (332.03.a)	calculate the appropriate measure of central tendency – mean,	9.M.5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers. (352.03.a)	10.M.5.3.1 Interpret and use basic statistical concepts, including mean, median, mode, range, and distribution of data, including outliers. (352.03.a)
						5.M.5.3.2 Find the range of a set of data using whole numbers. (312.03.b)	6.M.5.3.2 Calculate the range of a set of data. (322.03.b)	7.M.5.3.2 Discuss distribution of data, including range, frequency, gaps, and clusters. (332.03.b)	8.M.5.3.2 Explain the significance of distribution of data, including range, frequency, gaps, and clusters. (342.03.b)	9.M.5.3.2 Make predictions and draw conclusions based on statistical measures. (352.05.a)	10.M.5.3.2 Make predictions and draw conclusions based on statistical measures. (352.05.a)

Standard 5: Data Analysis, Probability, and Statistics (continued)

Goals:	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10
Goal 5.4: Understand basic concepts of probability.	No objectives at this grade level.	4.M.5.4.1 Predict the results of simple probability experiments using coins or spinners (e.g., 3 out of 6 choices). (302.04.a)	5.M.5.4.1 Predict, perform, and record results of simple probability experiments using fraction notation. (312.04.a)	6.M.5.4.1 Predict, perform, and record results of simple probability experiments. (322.04.a)	7.M.5.4.1 Predict, perform, and record results of simple probability experiments. (332.04.a)	8.M.5.4.1 Model situations of probability using simulations. (342.04.a)	9.M.5.4.1 Find probabilities based on dependent, independent, and compound events.	10.M.5.4.1 Find probabilities based on dependent, independent, and compound events.			
								7.M.5.4.2 Recognize equally likely outcomes. (332.04.c)	8.M.5.4.2 Recognize equally likely outcomes. (342.01.c)		
								7.M.5.4.3 Explain that probability ranges from impossible to certain (0% to 100%).	8.M.5.4.3 Explain that probability ranges from 0% to 100% and identify a situation as having high or low probability.	9.M.5.4.2 Contrast experimental and theoretical probability. (352.04.a)	10.M.5.4.2 Contrast experimental and theoretical probability. (352.04.a)
						5.M.5.4.2 Use the language of probability. (312.04.b)	6.M.5.4.2 Use the language of probability. (322.04.b)	7.M.5.4.4 Use the language of probability. (332.04.b)	8.M.5.4.4 Use the language of probability. (342.04.b)		
Goal 5.5: Make predictions or decisions based on data.	No objectives at this grade level.	No objectives at this grade level.	No objectives at this grade level.	3.M.5.5.1 Make predictions based on data.	4.M.5.5.1 Make predictions based on data. (298.01.c)	5.M.5.5.1 Make predictions and decisions based on data. (308.01.c)	6.M.5.5.1 Make predictions based on data. (318.01.c)	7.M.5.5.1 Make predictions based on simple theoretical probabilities. (332.05.a)	8.M.5.5.1 Make predictions based on experimental and theoretical probabilities. (342.05.a)	9.M.5.5.1 Make predictions based on randomness, chance, equally likely events, and probability. (352.04.c)	10.M.5.5.1 Make predictions based on randomness, chance, equally likely events, and probability. (352.04.c)
									8.M.5.5.2 Conduct statistical experiments and interpret results using tables, charts, or graphs. (342.05.c)	9.M.5.5.2 Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)	10.M.5.5.2 Use appropriate tools/technology to conduct simulations and employ graphical models to make predictions or decisions based on data. (352.05.a)
								7.M.5.5.2 Use appropriate vocabulary and notations. (332.05.b)	8.M.5.5.3 Use appropriate vocabulary and notations. (342.05.b)	9.M.5.5.3 Design, conduct, and interpret results of statistical experiments. (352.05.b)	10.M.5.5.3 Design, conduct, and interpret results of statistical experiments. (352.05.b)